

# AMD Enters Multiprocessing Server and Workstation Markets

Introducing AMD Athlon™ MP processor and  
AMD-760™ MP chipset: AMD's first  
Multiprocessing Capable Platform

# Agenda



- ❑ AMD's strategy for 2001 and beyond
- ❑ AMD's first multiprocessing server and workstation solution
  - AMD Athlon™ MP processor
  - AMD-760™ MP chipset
- ❑ Smarter multiprocessing
  - AMD Smart MP technology
- ❑ Protecting your investment – Platform longevity
  - AMD Socket A infrastructure
- ❑ Seamless compatibility
  - Integrate into existing infrastructure

# The 2001 AMD Story

Entering New Markets

# Strategy for 2001 and Beyond



- ❑ **Build on strong desktop computing foundation**
  - Maintain our strong position in consumer desktop
  - Grow our commercial business
  - Continue to extend the breadth of support for Socket A
- ❑ **Deliver leadership solutions for notebook computers**
  - Establish AMD Athlon™ processor with AMD PowerNow!™ technology as the standard for performance notebooks
  - Debut AMD Duron™ processor with AMD PowerNow! technology to deliver robust features for value notebooks
  - Build upon our innovative technologies such as AMD PowerNow! technology to differentiate our solutions as market leaders
- ❑ **Debut multiprocessing platforms for high-performance workstations**
  - Extend the AMD Athlon processor's proven performance in the 1-way workstation market to the 2-way workstation environment with the introduction of the AMD Athlon MP processor and the AMD-760™ MP chipset
- ❑ **Introduce innovative multi-way server solutions**
  - Initiate AMD's attack into the 1- and 2-way server market with the introduction of the AMD Athlon MP processor and the AMD-760 MP chipset
  - Introduce x86-64 technology with our "Hammer" products to enable seamless 32- and 64-bit computing
  - Deliver 4- and 8-way enterprise server solutions with the "Hammer" family of products

# Recent Commercial Successes



- ❑ 4/20/01 – NEC Japan, along with Microsoft Japan and ASCII NT, selects AMD Athlon™ processor to power Commercial "InternetStreamingServer"
- ❑ 3/14/01 – Boeing Company implements a 96-node AMD Athlon processor-based supercomputer cluster developed by Linux NetworX.
- ❑ 3/05/01 – NEC Computer International proposes AMD Athlon and AMD Duron processors for some of their commercial desktop computers
- ❑ 2/28/01 – AMD voted "Best of Show" by IT attendees at Gartner Group Midsize Enterprise Summit (MES)
- ❑ 2/6/01 – ICS Olivetti gains key commercial design win in Italian Government with AMD Athlon processor-based systems
- ❑ 12/4/00 – MAXDATA targeting enterprise and medium business with AMD Athlon and AMD Duron™ processor-based systems
- ❑ End users with AMD Athlon processor-based workstations, servers, and supercomputers today: Calvin College, Hong Kong University of Science & Technology, Tokyo Institute of Technology, University of California at Santa Cruz, University of Delaware, University of Kentucky, Western Michigan University

AMD Athlon™ MP processor  
&  
AMD-760™ MP chipset

# Workstation Market Overview

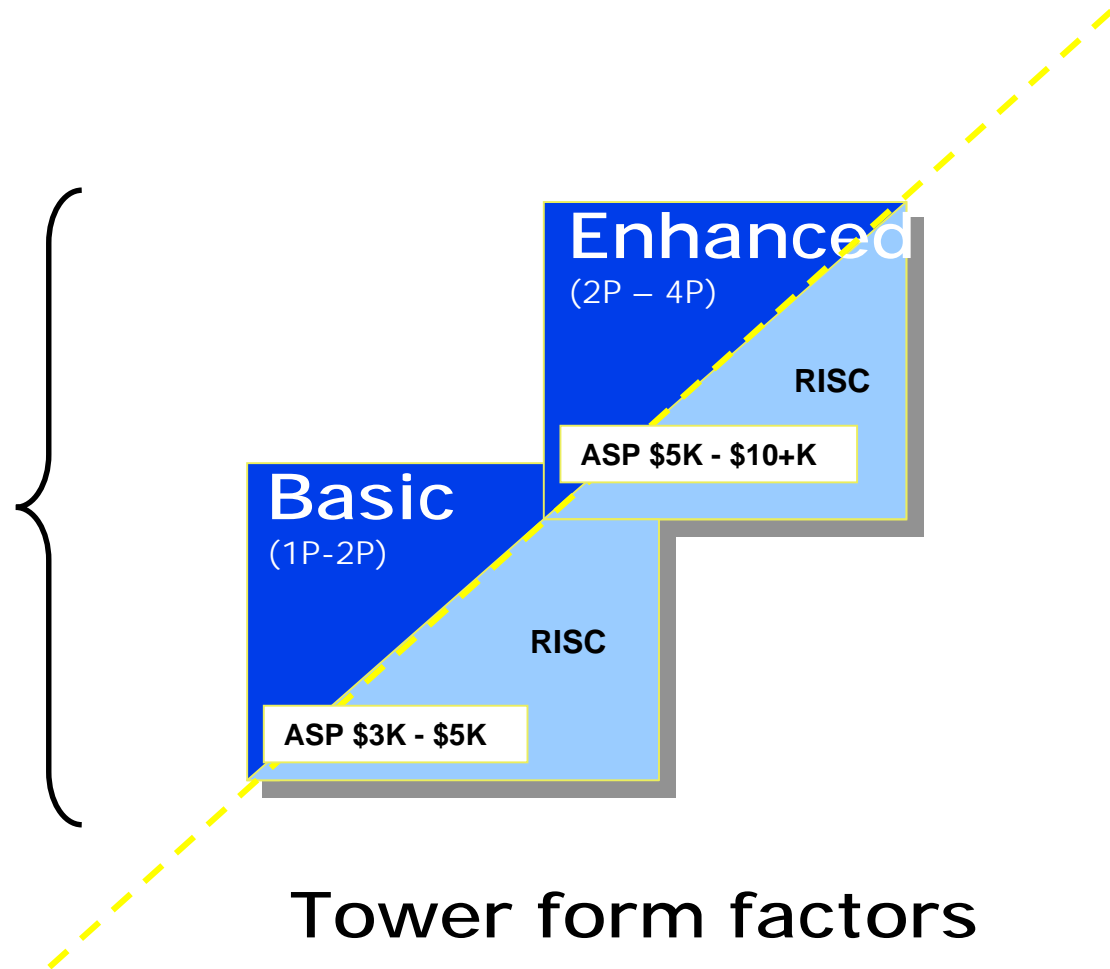


## Performance & Platform

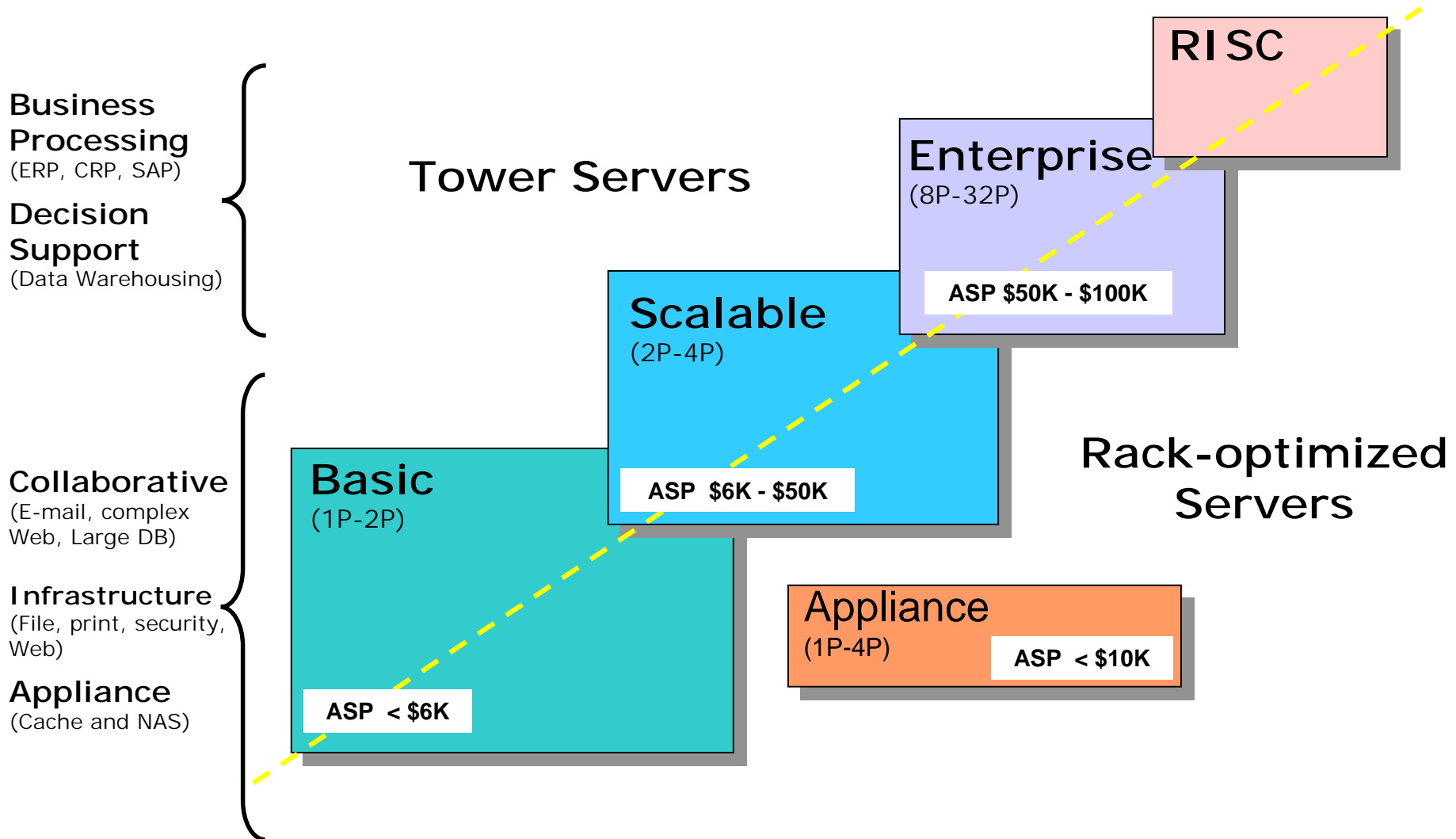
**Engineering**  
(MCAD and EDA)

**Digital Content  
Creation**  
(Animation, Editing,  
Film/Video)

**Financial**  
(Government, Banking,  
Brokerage)



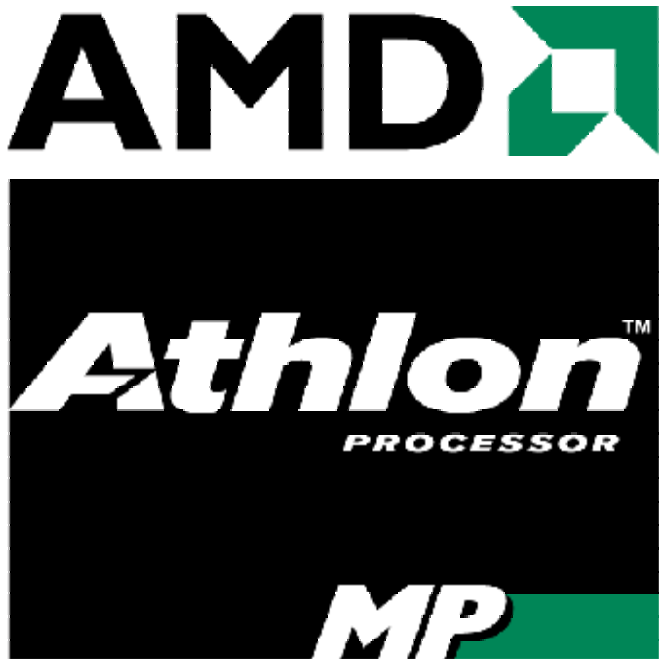
# Server Market Overview





# AMD Athlon™ MP Processor

## Performance for the Enterprise



- ❑ The AMD Athlon™ MP processor brings the **performance and reliability** of the AMD Athlon processor brand to enterprise computing.
- ❑ The AMD Athlon MP processor with **Smart MP technology** offers **unrivalled performance** for widely available 1- and 2-way x86 enterprise computing platforms.
- ❑ The AMD Athlon MP processor is available at frequencies of 1.2GHz and 1GHz.
- ❑ Systems based on the AMD Athlon MP processor are expected from more than **50** manufacturers worldwide, with more than **20** manufacturers offering systems for sale immediately.\*

\*See backup for system availability

# AMD Athlon™ MP Processor

## Next-Generation Features

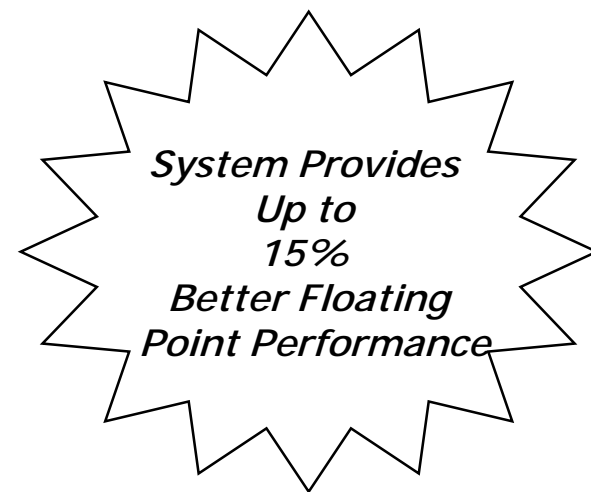
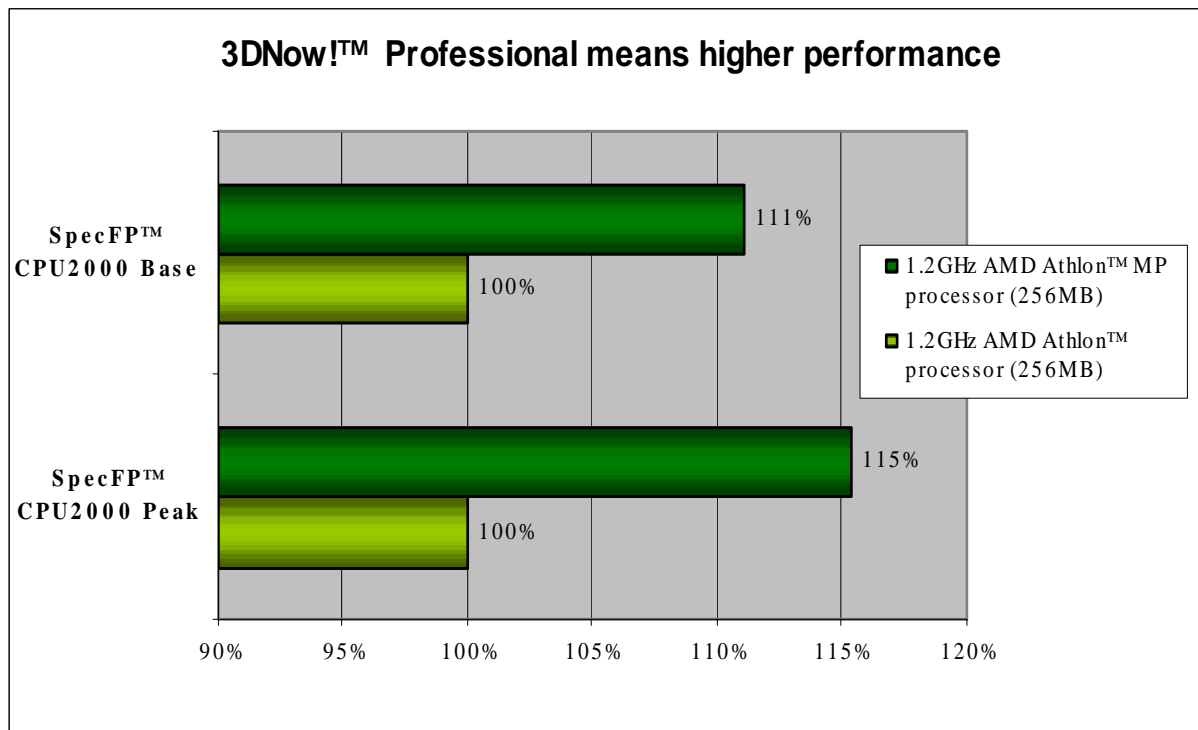


	AMD Athlon™ Processor	AMD Athlon MP Processor
Infrastructure	Socket A	Socket A
Process Technology	0.18 micron	0.18 micron
# of Transistors (die size)	37 million (120 mm <sup>2</sup> )	37.5 million (128 mm <sup>2</sup> )
Relative Power Consumption	--	~20% reduction
High-Performance Full-Speed Cache	384k total	384k total with data pre-fetch
3D and Multimedia Instructions	Enhanced 3DNow!™	3DNow! Professional (adds 52 new instructions)
Features for Multiprocessing Environments	No	Smart MP technology

# 3DNow!™ Professional Technology



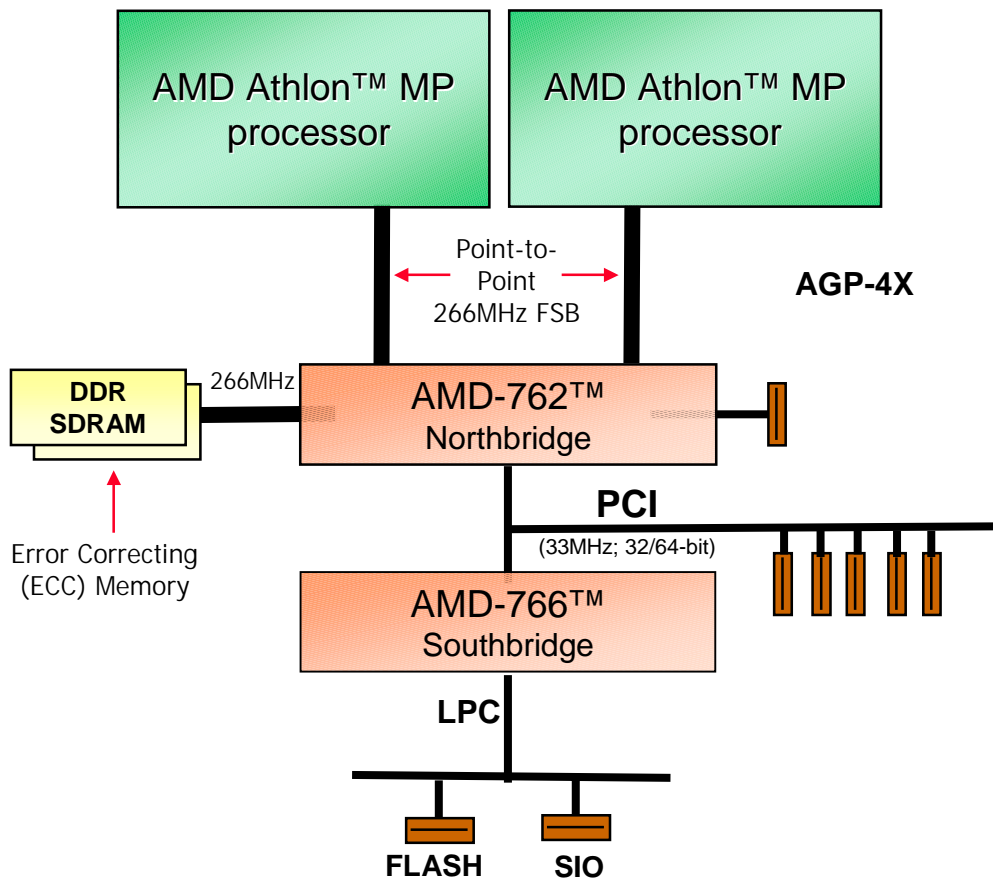
- ❑ The AMD Athlon™ MP processor incorporates 3DNow!™ Professional technology, 52 new instructions which further extend the capability of 3DNow! technology to more software than any other x86 processor in the world.
- ❑ Software specifically tuned for 3DNow! Professional technology results in better performance for computation-intensive applications like digital content creation and multimedia encoding for streaming servers.



*\*See backup for system configuration info*

# AMD-760™ MP Chipset

## Performance for Your Enterprise



- ❑ AMD-762™ Northbridge
  - Includes two separate point-to-point system buses (FSB).
  - DDR memory bus with Error Correction (ECC) support
  - AGP-4X for outstanding graphics performance
  - Incorporates 33MHz/32-bit/64-bit PCI support.
- ❑ AMD-766™ Southbridge
  - ATA 100 support for optimal I/O bandwidth
  - Legacy I/O support
- ❑ Equipped with power and system management features for the enterprise environment

# AMD-760™ MP Chipset

## Next-Generation Features



	AMD-760™ Chipset	AMD-760 MP Chipset
Process Technology	0.25um	0.25um
Number of Processors Supported	1	2
Front Side Bus Speed	Enhanced 266MHz/200MHz FSB supports up to 2.1GB/s bandwidth	Two Enhanced 266MHz FSB Each bus supports 2.1GB/s
DDR Memory Support	PC2100 and PC1600 (ECC memory supported)	PC2100 (ECC memory supported)
DDR Memory Capacity	Up to 4GB of Memory Space	Up to 4GB of Memory Space
Graphics Subsystem	AGP-4X	AGP-4x
PCI Bus	33MHz/32-bit	33MHz/64-bit 33MHz/32-bit
Storage Subsystem	ATA 33/66/100	ATA 33/66/100
System Management	Yes	Yes
Power Management	Yes	Yes

# AMD Smart MP Technology

## Smarter Multiprocessing

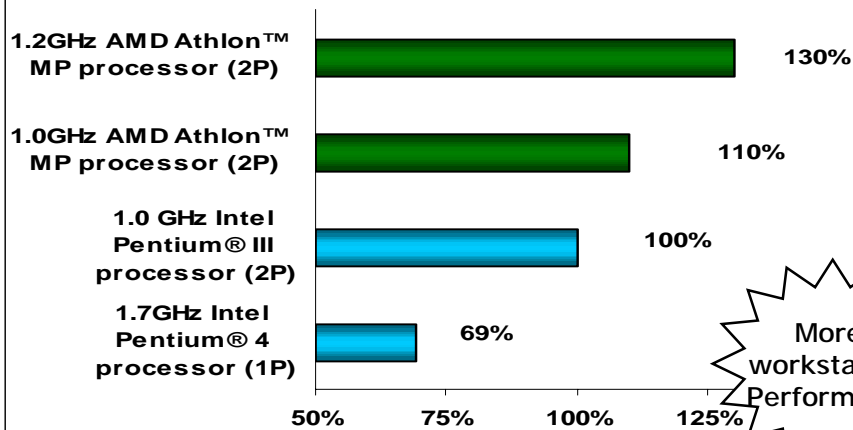


- ❑ The combined power of the AMD Athlon™ MP processor and the AMD-760™ MP chipset delivers a smarter implementation for multiprocessing.
- ❑ Dual point-to-point, high-speed 266MHz AMD Athlon system busses
  - Dedicated bus per CPU delivers better performance
  - Designed to provide up to 4.2 GB/s of bus bandwidth in a 2P system
  - Transaction-based protocol allows CPUs to continue working while outstanding data requests are being filled
- ❑ Optimized “Modified Owner Exclusive Shared Invalid”, or MOESI, Cache Coherency Protocol
  - Keeps track of data in CPU caches
  - Identifies when data from one CPU is needed by another, and when data is shared between CPUs
  - Effectively reduces memory traffic, increasing available bandwidth
- ❑ Innovative “Snoop” busses
  - High-speed inter-processor communication bus for CPU snooping
  - Transfers between CPU cache, through the Data Bus, reduce memory bandwidth requirements for shared data

# Smarter Multiprocessing Systems Result in High Performance on Multi-threaded Applications

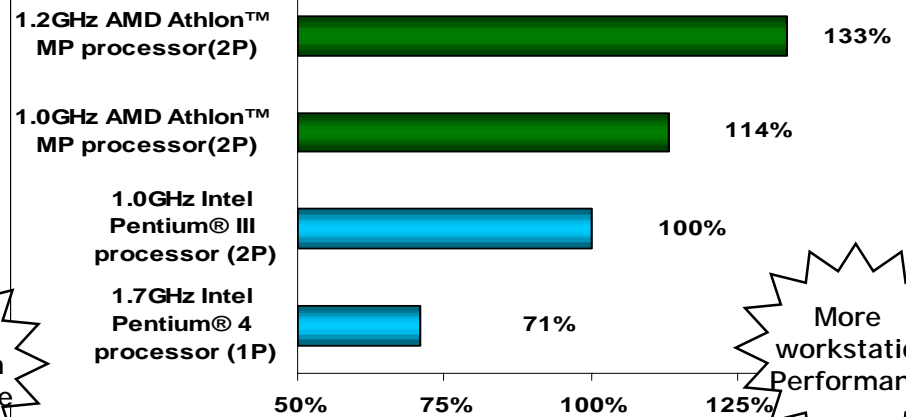


**SoftImage XSI**  
(Modeling, 3D Animation, Rendering)



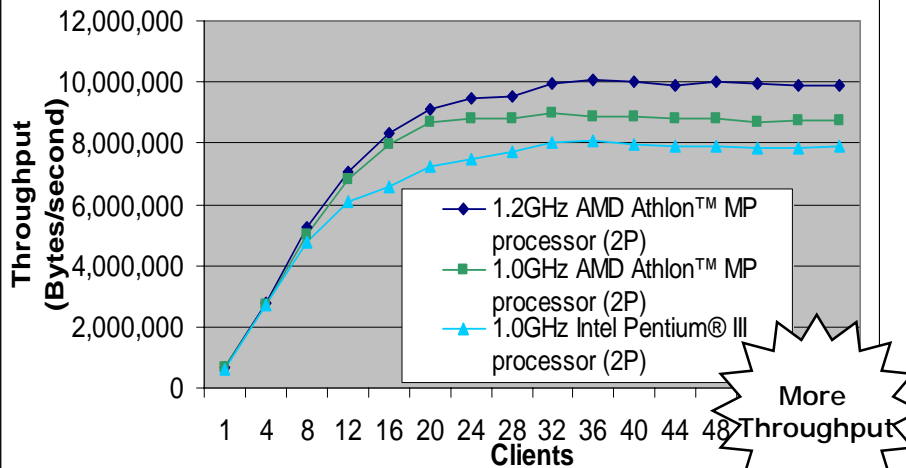
More  
workstation  
Performance

**3D Studio Max**  
(Modeling, 3D Animation, Rendering)



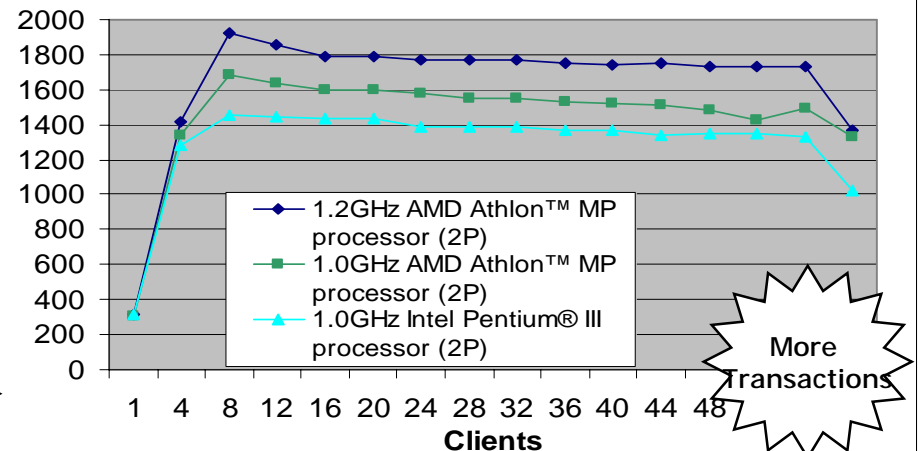
More  
workstation  
Performance

**WebBench™ Ecommerce Test**  
(Measures performance of Web Server)



More  
Throughput

**ServerBench®**  
(Measures the performance of an application server in the client/server environment)



More  
Transactions

\*See backup for system configuration info

# Delivers Value to The Enterprise



- ❑ Stability
- ❑ Performance
- ❑ Compatibility

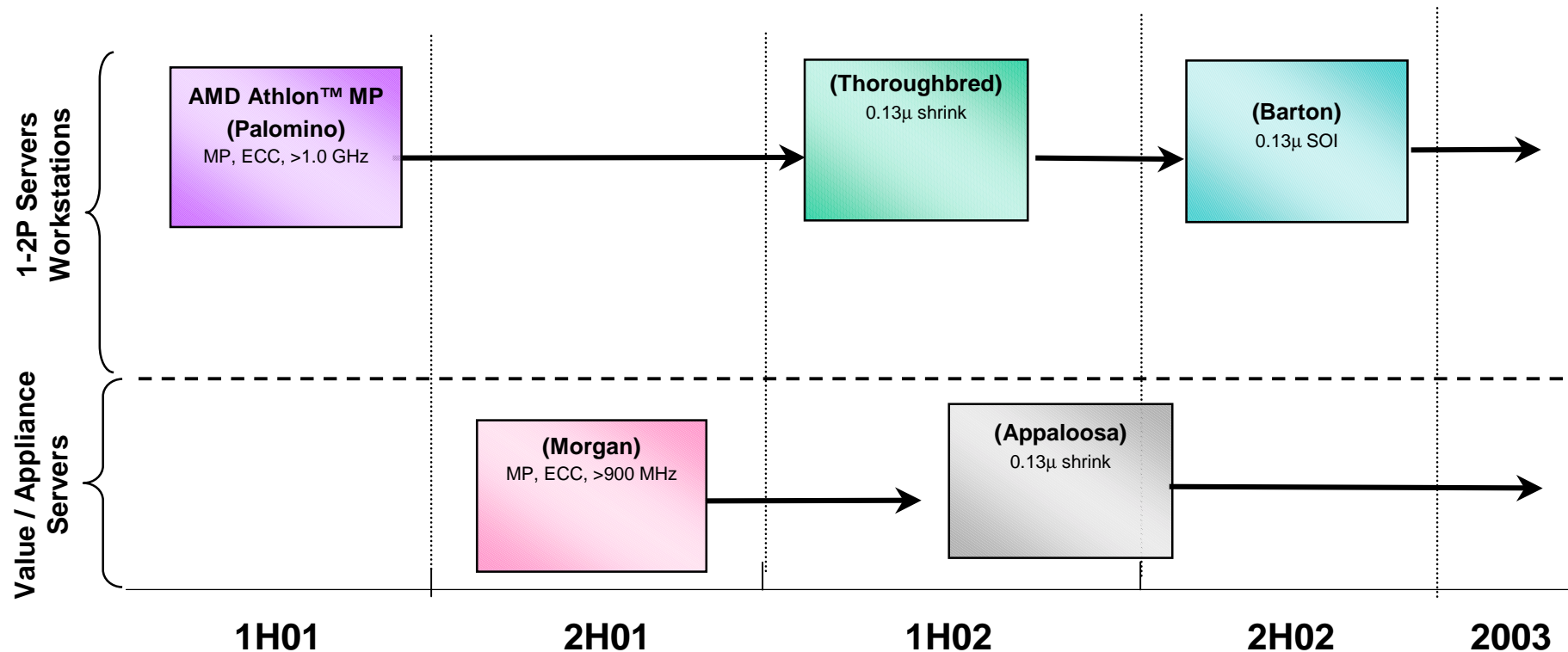


# AMD Processors Deliver Stable & Consistent Platform for Enterprise Computing



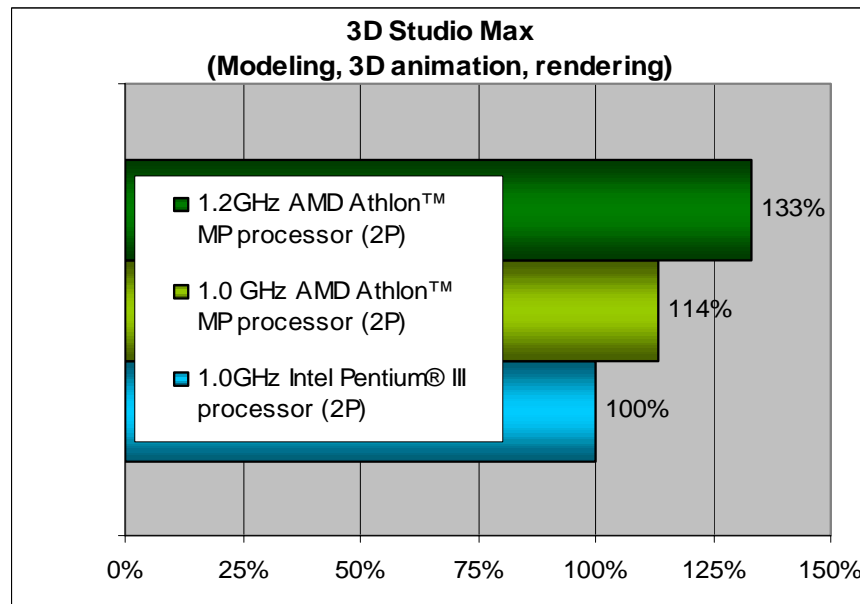
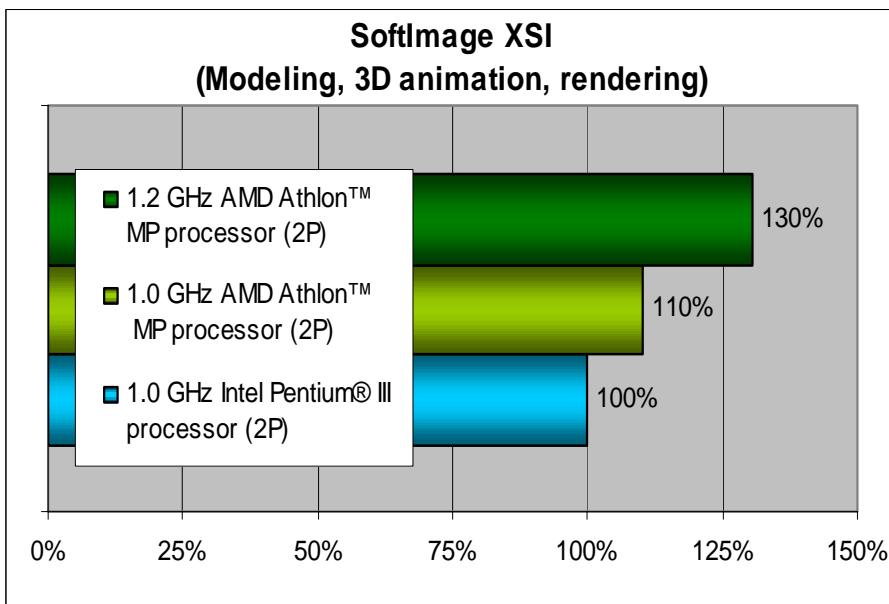
- ❑ AMD's established Socket A platforms provide the most stable infrastructure for commercial computer systems.
- ❑ Socket A platforms are supported across all markets AMD serves.
  - Desktop
  - Mobile
  - Workstation
  - Server
- ❑ AMD's Socket A platform is planned to be stable and unchanging through 2002 and beyond.
  - Sustained with solid chipset backing
  - Strengthened by established software (BIOS) images
  - Substantiated by a well-defined, scalable platform and technology roadmap into 2002 and beyond
- ❑ Lower infrastructure turnover means lower enterprise management costs.

# Protecting Your Investment



- ❑ All products planned to use AMD's Socket A interface
- ❑ Stable and single platform offers easy and flexible upgrade path addressing a wide range of commercial computing needs
- ❑ Enables enterprise customers to meet today's needs while helping to ensure long-term investment protection and forging the path towards future growth

# Ultimate 2-way Enterprise Computing



- ❑ Incorporating Smart MP technology, the AMD Athlon™ MP processor, AMD-760™ MP chipset, and DDR memory achieve better overall performance on widely available, x86-based, dual-processor systems.
- ❑ High overall performance for dual-processor platforms lets you realize great processing power from your investment, making AMD the better choice for multiprocessor applications

# Web Server Powered by AMD Athlon™ MP Processor Offers More Web Connectivity

- ❑ SPECweb™ 99 measures the maximum number of simultaneous connections that a Web server is able to support while meeting performance requirements
- ❑ AMD Athlon MP processor offers the highest **client connectivity** in x86 Windows® environments
- ❑ AMD Athlon MP processor enables world-class Web server performance

Model	Fujitsu Siemens Primergy H400	HP NetServer LP 1000r	DELL PowerApp.w eb 120	DELL PowerEdge 4400/800	TYAN Thunder
Processor Type	700 MHz Intel Pentium® III Xeon	933 MHz Pentium III	1 GHz Pentium III	800 MHz Pentium III Xeon	1.0 GHz AMD Athlon™ MP
# Processors	2	2	2	2	2
Memory	8 GB	4 GB	2 GB	4 GB	2 GB (DDR)
Disk Subsystem	7 9GB (FUJITSU MAG3091LC )	3 18GB 15K Ultra3 SCSI	3 36GB 10KRPM	5 9GB 10KRPM	7 8GB Ultra3
Disk Controllers	1 Mylex DAC1164P	Integrated Ultra3 SCSI	PERC3/DCL RAID	Adaptec AIC- 7899 SCSI	AMI Elite 1600
Network Card	Alteon AceNIC 1000SX	Gigabit Ethernet	Alteon AceNIC 1000SX	Alteon AceNIC 1000SX	3COM 3C985
<b>Submitted Result</b>	<b>1186</b>	<b>1117</b>	<b>1070</b>	<b>1060</b>	<b>1225*</b>

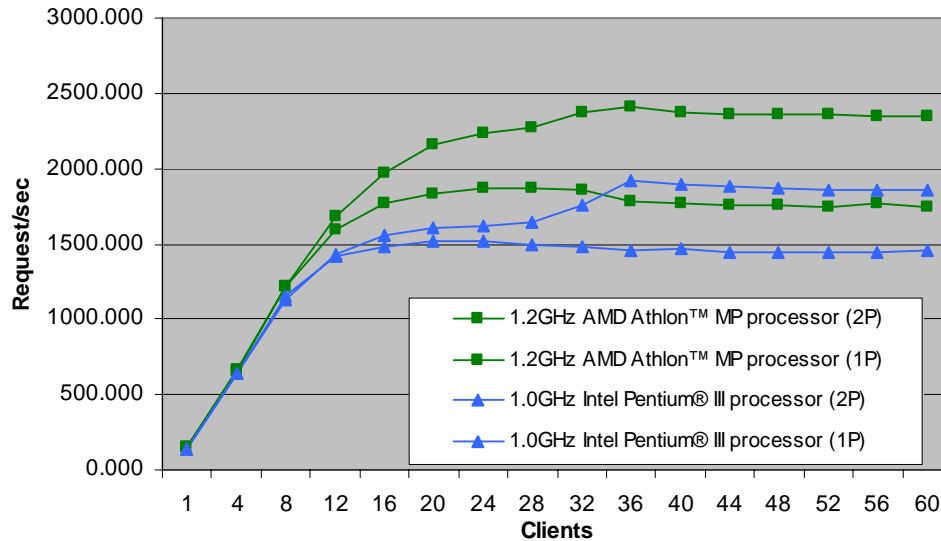
\* Unofficial benchmark results, AMD will submit scores to SPEC committee

\*See backup for system configuration information

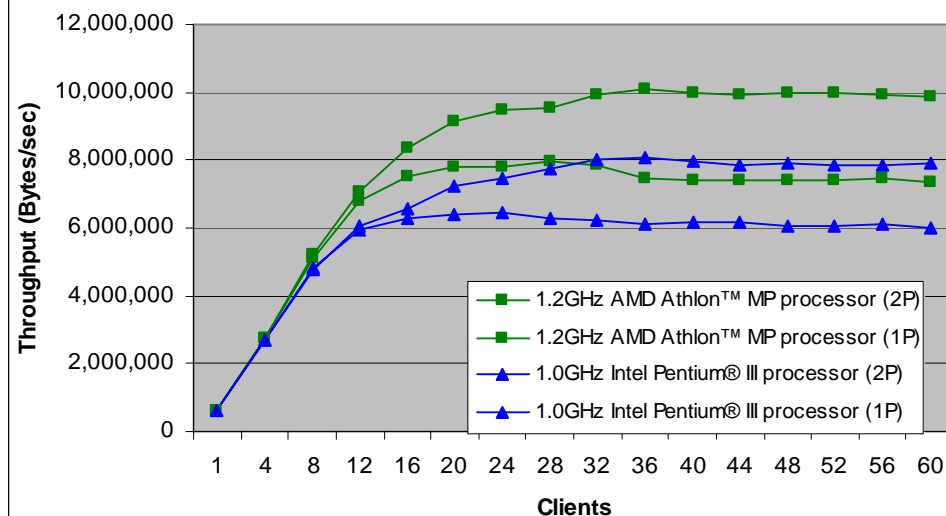
# Exceptional Web Server Performance



WebBench™ Ecommerce Test



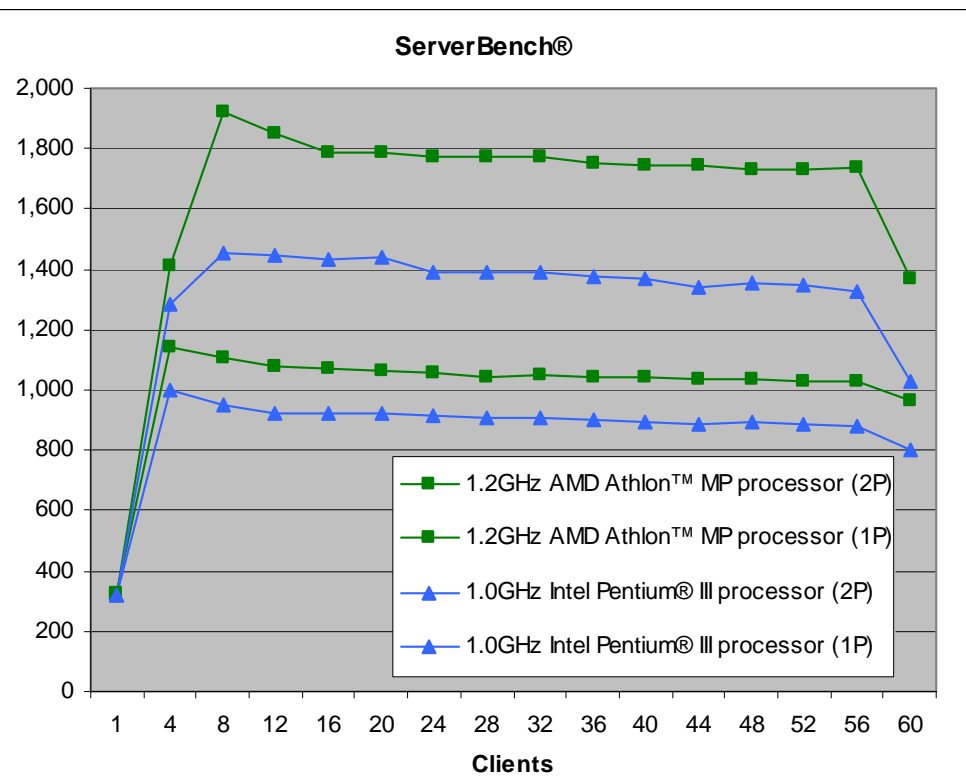
WebBench™ ECommerce Test



- ❑ **WebBench™** measures the performance of Web servers
- ❑ Handles up to **38% more client requests per second** in the dual processor mode than its x86 processor-based system competition in the Windows® environment
- ❑ Delivers up to **27% more peak throughput** in the dual processor mode than its x86 processor-based system competition in the Windows® environment
- ❑ Platforms powered by AMD Athlon™ MP processors with DDR memory deliver exceptional Web server performance

*\*See backup for system configuration info*

# Outstanding Application Server Performance



*\*See backup for system configuration information*

- ❑ **ServerBench®** measures the performance of an application server in a client/server environment
- ❑ Systems with AMD processors achieve up to **73% scaling** from uni- to dual-processors
- ❑ AMD Athlon MP processor-based systems with DDR memory deliver up to **33% more transactions per second** in the dual processor mode than their x86 competition
- ❑ Platforms powered by AMD Athlon™ MP processors offer exceptional performance in an application-server environment

# Seamless Compatibility

## Integrate into Current Infrastructure



- ❑ AMD continues to provide the standard x86 platform computing solution.
- ❑ AMD partners closely with the industry's leading hardware and software companies to evaluate compatibility and optimize performance.
- ❑ AMD conducts our own extensive and rigorous compatibility and hardware validation testing procedures.

*Conclusion: Helps ensure comprehensive compatibility and seamless integration into the enterprise environment.*

# Summary



- AMD is committed to growing its business into all major computer markets: desktop PCs, notebooks, servers and workstations.
- Today AMD takes a fundamental step into the enterprise server and workstation markets by introducing its first multiprocessing capable platform. The platform is based on the AMD Athlon™ MP processor and the AMD-760™ MP chipset for 1- and 2-way servers and workstations.
- AMD's multiprocessing platform incorporates AMD's latest innovation, Smart MP technology, which enables you to achieve better overall performance.
- AMD's Socket A platform is planned to offer stability over time, allowing IT managers to lower their enterprise management costs.
- To allow seamless integration into the enterprise environment, AMD and its many industry-leading hardware and software partners conduct validation and testing procedures to evaluate compatibility.
- Systems based on AMD's multiprocessing platform are available immediately from more than 20 different OEMs worldwide.



# Backup

# AMD Athlon™ MP Processor Pricing



All pricing in 1,000-unit quantities

□ 1.2GHz AMD Athlon MP Processor	\$265
□ 1GHz AMD Athlon MP Processor	\$215

# AMD Athlon™ MP Processor



## Expected Worldwide System Availability

AMERICAS		EUROPE	ASIA/JAPAN	
Ace Computer	Penguin Computing	Carri*	A-AMCOM*	Aro-system
Alienware*	Premio	Dataswift	ASI Solutions*	Canopus
Angstrom Micro*	Racksaver*	Lion*	Atec Computers*	Faith
Appro	Rackspace*	Olidata	Optima Computer*	Freeway
Aspect Computers	SAG Electronics	MaxBlack*	Xenon*	I-O Net
Boldata*	Seanix	Maxdata		Kojiro*
Boxx	Systemax	Netsquare		MCJ
Caliber	Tangent	Transtec*		Plat'Home
Colfax	VA Linux	Tuxon		PROTON*
CompCity	XI*	Waibel*		
Continental Resources*				
DTP Micro				
Elite PC*				
Hard Data				
Linux Media Arts				
Linux Networx*				
MaxVision*				
Micro 3000				
Micro Pro*				
Monarch Computer*				
Now Micro				
PCBox				

**More than 50 system manufacturers worldwide are expected to sell AMD Athlon™ MP processor-based systems. \*Systems expected to be available for sale immediately.**

# Motherboard Partners



- Tyan
  - Immediate worldwide availability

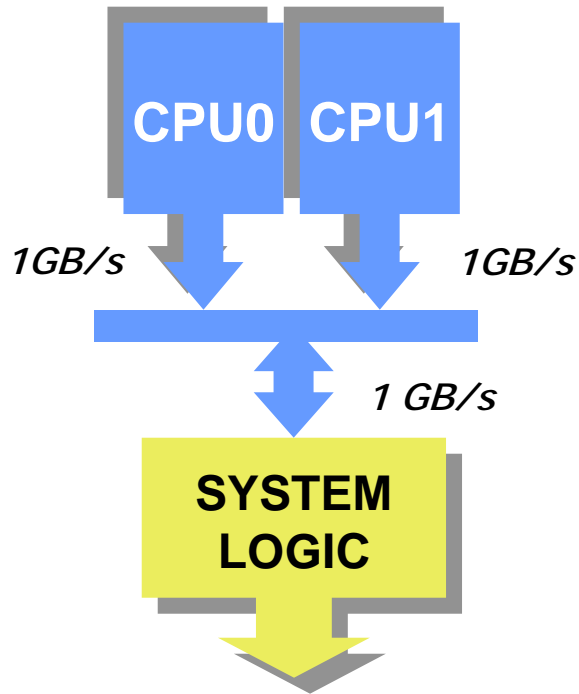


- Asus, Abit, Gigabyte, MSI
  - Worldwide availability expected Q301



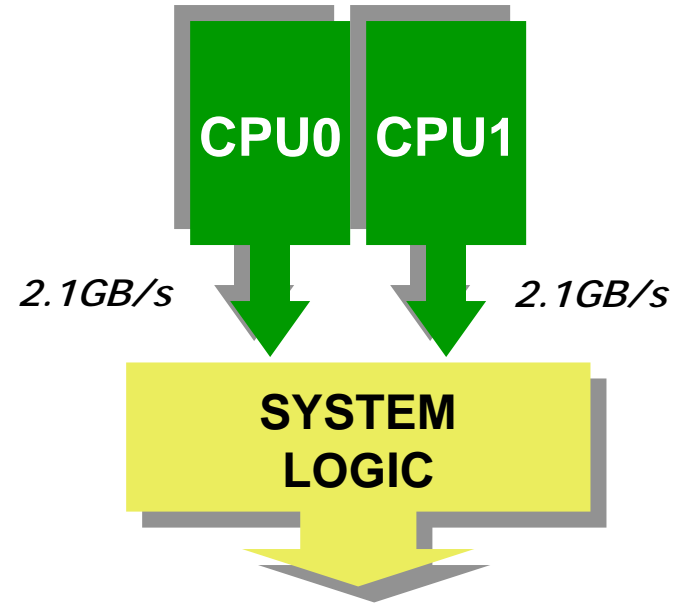
# Smart MP Technology

## Bandwidth comparison



### SHARED BUS

- Shared Bus Limits Frequency
- Shared Bus slows memory access

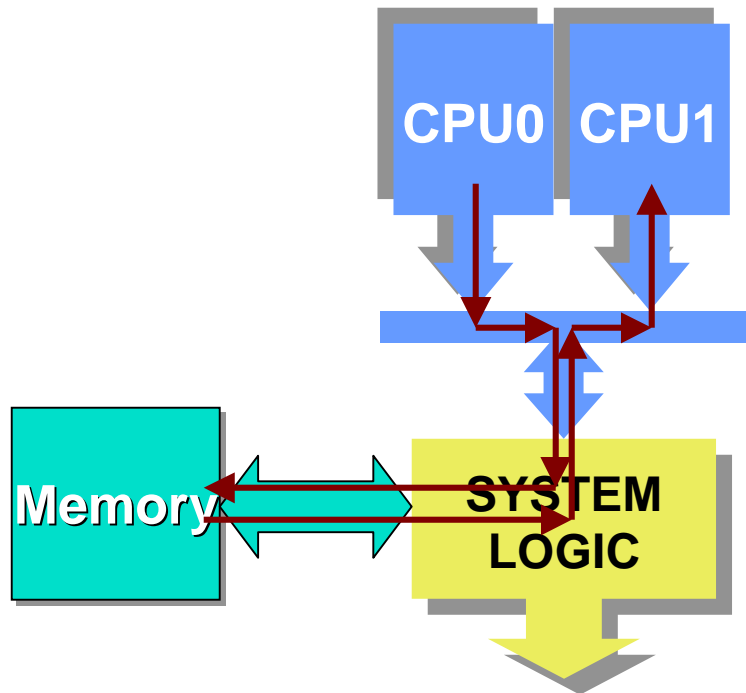


### POINT-TO-POINT

- Dedicated bus per CPU is designed to delivery better overall performance
- Transaction-based protocol allows CPUs to continue processing while outstanding data requests are being filled

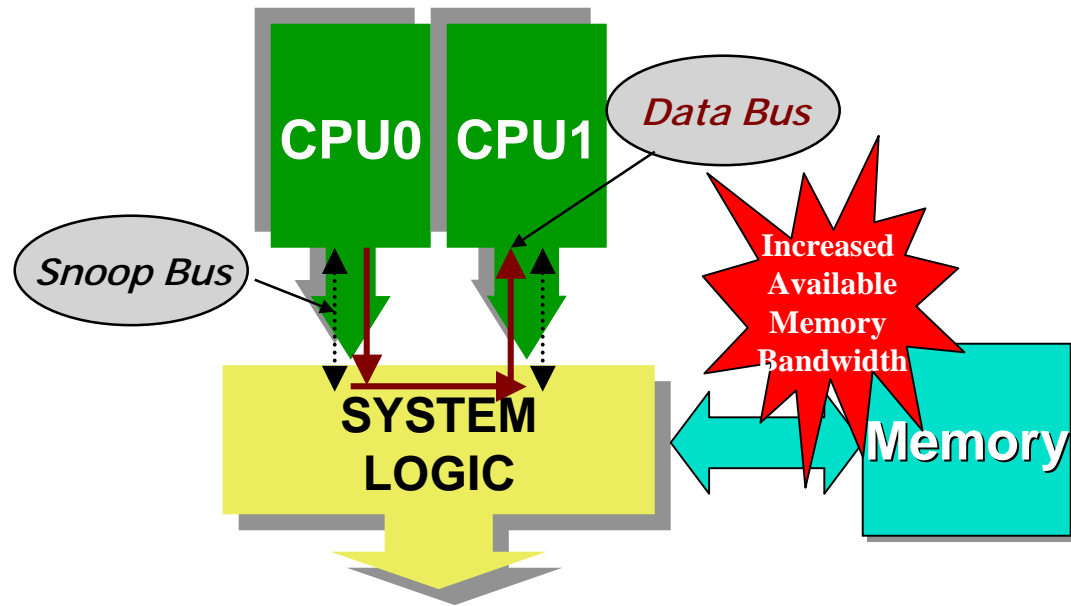
# Smart MP Technology

## Cache Sharing Comparison



### SHARED BUS

- Inter-CPU data transfer goes all the way to the memory and back
- Shared Bus slows memory access



### POINT-TO-POINT

- High-speed inter-CPU communication "Snoop" bus
- Transfers between CPU caches, through the Data Bus, reduces memory bandwidth requirements for shared data

# AMD Athlon™ MP Processor

## Features and Benefits



Feature	Benefit
Smart MP	AMD Smart MP technology optimizes the execution of multi-threaded, mission-critical applications empowering your enterprise to achieve new levels of productivity.
Stable Socket A infrastructure	Lowering infrastructure churn lowers enterprise management costs. All AMD processors have a single stable platform, socket A, giving IT managers the ability to address a wide range of enterprise computing needs with a single platform.
3DNow!™ Professional	<p>Software specifically tuned for 3DNow!™ Professional technology means better performance in computation-intensive applications like digital content creation and multimedia encoding for streaming servers.</p> <p>The AMD Athlon™ MP processor incorporates 3DNow! Professional technology, 52 new instructions which further extend the capability of 3DNow! technology to more software than any other processor in the world.</p>
High Performance Full-Speed Cache	The AMD Athlon MP processor includes an innovative new cache architecture featuring an exclusive L2 TLB and data pre-fetch. This technology proactively feeds data to the processor before you need it, minimizing data search times and maximizing system performance and throughput.
Superscalar FPU	The AMD Athlon MP boasts the fastest x87 floating point engine in its class. The world's only 3-pipe superscalar floating point unit designed to provide unsurpassed floating point performance allowing developers the ability to visualize, design and animate in less time, thus improving creativity and your productivity goals.
Advanced FSB	AMD Athlon system bus featuring 266MHz with 8-bit ECC provides the reliability and system bandwidth demanded to power mission-critical applications.

# AMD-760™ MP vs. Intel 840 Chipset Feature Comparisons

AMD-760™ MP	AMD	Intel	Intel® 840
266MHz FSB (Up to 2.1GB/S per bus))	✓		133MHz FSB (Up to 1GB/S)
Dual Point-to-Point System Busses	✓		Single Share System Bus
4GB Memory	✓		2GB Memory (without memory repeater hub)
DDR (PC2100)	✓		RDRAM (PC800) SDRAM (PC100) need memory repeater hub
AGP-4X	✓	✓	AGP-4X
32/64bit 66MHz		✓	32/64bit 66MHz (through optional chip)
32/64 bit 33MHz	✓	✓	32/64bit 33MHz
ATA 33/66/100 Drives	✓		ATA 66 Drives
(4) USB Ports	✓		(2) USB Ports

- **Deliver higher processor front side bus bandwidth**
  - (266Mhz FSB, Dual Point-to-Point Bus)
- **Provide elegant two-chip solution with DDR memory interface**
  - (AMD-762™ Northbridge, AMD-766™ Southbridge, high performance, cost-effective DDR Memory Technology, no need for memory repeater hub)
- **Feature rich offering for workstation design**
  - (AGP-4X with AGP Pro support, 4GB memory support, high performance DDR memory interface, up to seven PCI slots, PCI 32/64bit @ 33MHz, ATA 100 support)
- **Reliability, Compatibility and Longevity**



# AMD-760™ MP vs. ServerSet III LE Chipset Feature Comparisons



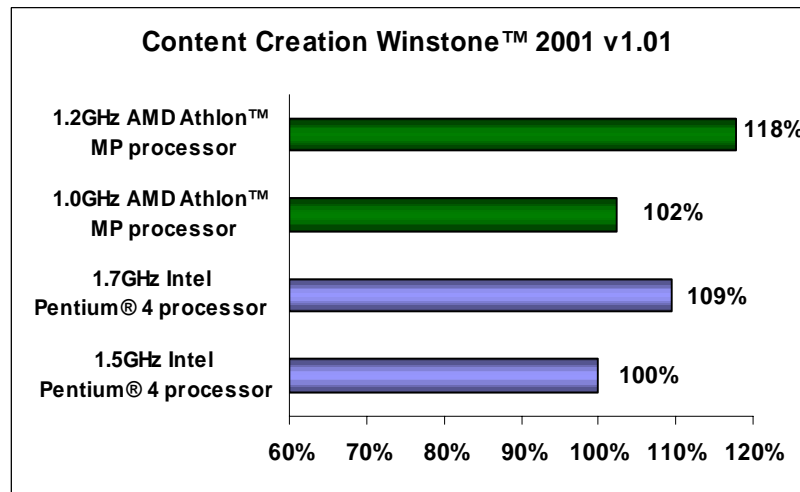
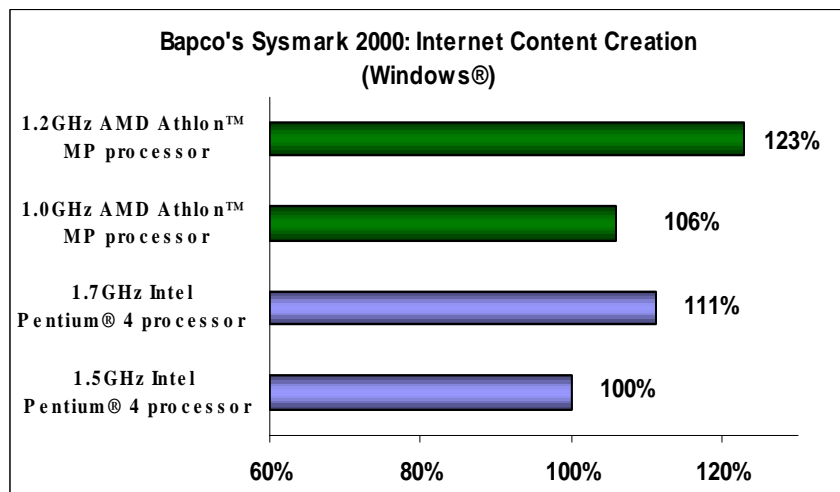
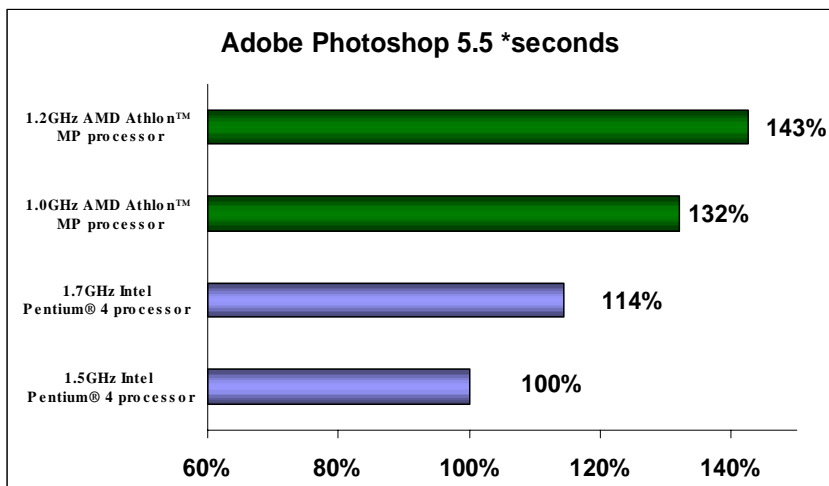
AMD-760™ MP	AMD	SW	ServerSet III LE
266MHz FSB (2.1GB/S @266Mhz)	✓		133MHZ FSB (1GB/S @ 133Mhz)
Dual Point-to-Point System Busses	✓		Single Share System Bus
PC2100 DDR	✓		PC133 SDRAM
4GB Memory	✓	✓	4 GB Memory
(2) 32/64bit 66MHz		✓	(2) 32/64 bit 66Mhz
(5) 32/64bit 33MHz	✓	✓	(5) 32/64 bit 33MHz
Server Mgmt Bus (SMBus)	✓	✓	Server Mgmt Bus (SMBus)
ATA 33/66/100 Drives	✓		ATA 66 IDE Drives
Power Management Support	✓		
Integrated I/O APCI	✓	✓	Integrated I/O APCI
Legacy 32-bit	✓	✓	Legacy 32-bit
(4) USB Ports	✓	✓	(4) USB Ports

- **Deliver better memory performance and bandwidth**
  - (266Mhz FSB, Dual Point-to-Point Bus, DDR Memory Technology)
- **Provide high I/O bandwidth**
  - (PCI 32 or 64/33Mhz support, ATA 100 support)
- **Feature rich offering for server design**
  - (SMBus, Power Management support, up to seven PCI slots)
- **Reliability, Compatibility and Longevity**

# Uniprocessor: Digital Content Creation (DCC) Performance

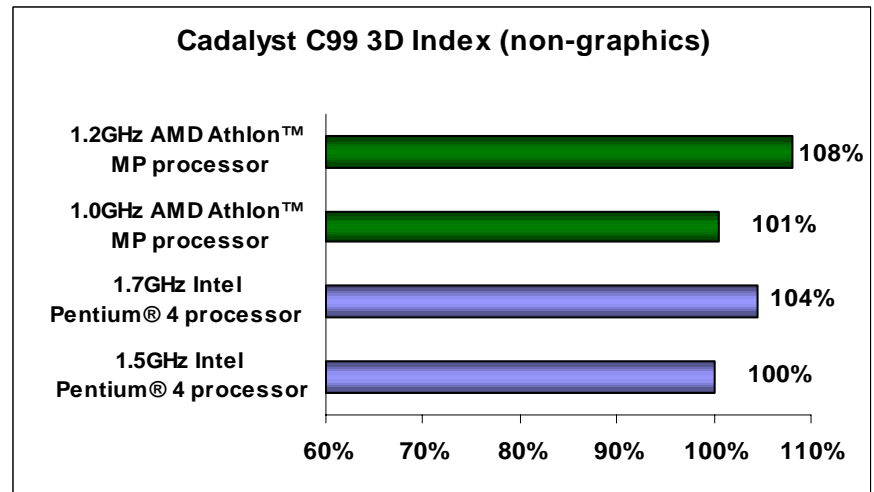
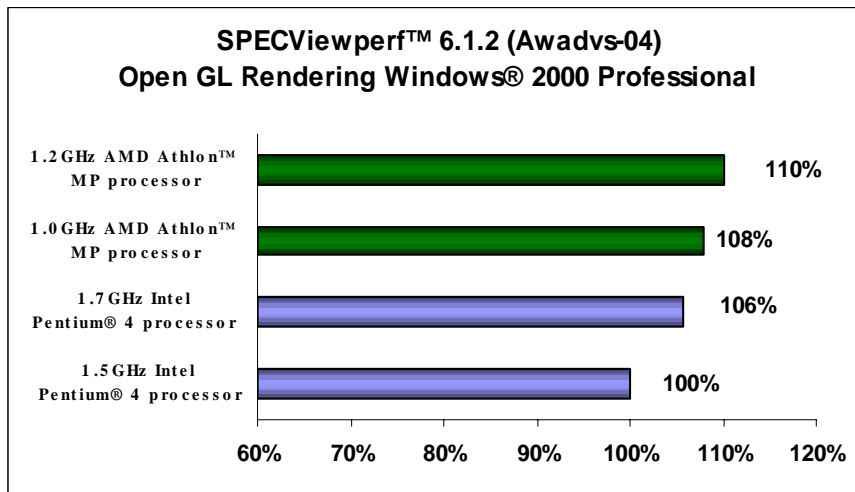
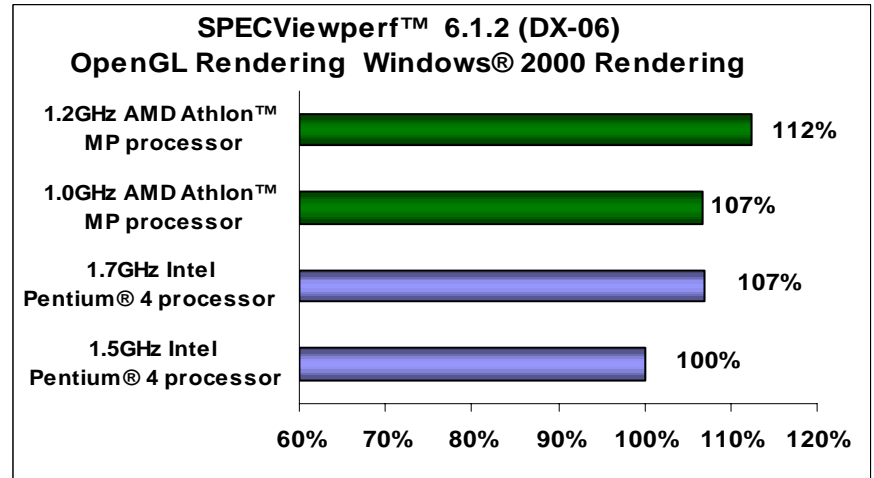
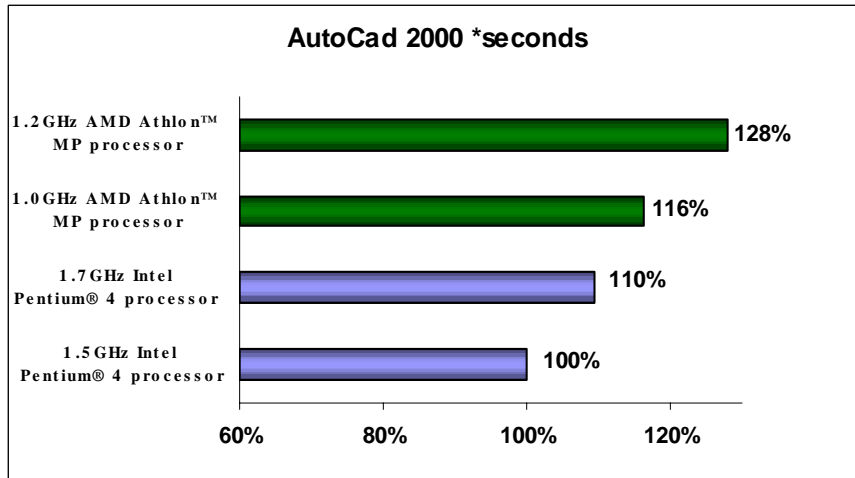


The AMD Athlon™ MP processor builds on the AMD Athlon processor's industry-leading performance of AMD Athlon processor-based systems with DDR memory by delivering **up to 43% more** on industry standard benchmarks.



\*See backup for system configuration information

# Uniprocessor: Computer Aided Drawing (CAD) Performance



# Single and Dual 1.0/1.2 GHz AMD Athlon™ MP Processor Workstation Configuration



<b>Operating System</b>	<b>Windows® 2000 Professional</b>	With Service Pack 1
<b>Hardware</b>	Motherboard	Tyan Thunder, BIOS rev. PGNA02-7 (not publicly available)
	Chipset	AMD-760™ MP
	Memory	Samsung PC2100 Cas2 (DDR SDRAM) Qty. (2), 256MB DIMM Modules (512MB total)
	Hard Drive	Seagate Cheetah 18GB Ultra 160 15k rpm (model 318451LW)
	Network Card	Allied Telesyn AT2700TX 10/100
	RAID Controller	AMI MegaRAID Express 500
	Video Card Sound Card	Diamond Multimedia Fire GL2 (64MB, 4x AGP) Creative Labs Sound Blaster Live CT4830
<b>Drivers</b>	AGP Miniport	AMD AGP miniport driver rev. 522S
	IDE Drivers	AMD driver – version 140a
	Network Card	Driver provided by operating system - version 4.8.0.0
	Sound Card	Driver provided by operating system - version 5.0.2184.1
	Video Card	Driver provided by Diamond - version 2070

# Single and Dual 1.0/1.2 GHz AMD Athlon™ MP Processor Server Configuration



<b>Operating System</b>	<b>Windows® 2000 Server</b>	With Service Pack 1
<b>Hardware</b>	Motherboard	Tyan Thunder, BIOS rev. PGNA02-7 (not publicly available)
	Chipset	AMD-760™ MP
	Memory	Samsung PC2100 Cas2 (DDR SDRAM) Qty. (4), 256MB DIMM Modules (1024MB total)
	Hard Drive	(4) Seagate Cheetah 18GB Ultra 160 15k rpm (model 318451LW)
	Network Card	(2) Intel Pro 100+
	RAID Controller	AMI MegaRAID Elite 1600
	Video Card	ATI Rage XL PCI (on-board)
<b>Drivers</b>	AGP Miniport	AMD AGP miniport driver rev. 522S
	RAID Controller Drivers	Driver provided by AMI – version 5.21
	Network Card	Driver provided by operating system - version 4.1.67
	Video Card	Driver provided by operating system – version 5.0.2184.1

# Single 1.2 GHz AMD Athlon™ Processor System Configuration for submitted SpecFP CPU 2000 Benchmark



Operating System	Windows® 2000 Professional	With Service Pack 1
Hardware	Motherboard	Gigabyte 7DX F2 BIOS
	Chipset	AMD-761™ Northbridge & VT82C686A Southbridge
	Memory	Samsung PC2100 Cas2 (DDR SDRAM) Qty. (2), 128MB DIMM Modules (256MB total)
	Hard Drive	IBM 30.7GB UDMA 100 (model DTLA-307030)
	Network Card	None
	RAID Controller	None
	Video Card	Diamond Stealth 3D 3000
Drivers	AGP Miniport	AMD AGP miniport driver rev. 522S
	IDE Drivers	Driver provided by operating system – Version 5.0.2183.1
	Network Card	None
	Sound Card	None
	Video Card	Driver provided by operating system

# Single and Dual 1.0 GHz Intel Pentium® III Processor Workstation Configuration



<b>Operating System</b>	<b>Windows® 2000 Professional</b>	With Service Pack 1
<b>Hardware</b>	Motherboard	SuperMicro Pentium®IIIDR3, BIOS rev. R1.0A
	Chipset	Intel 840
	Memory	Samsung RAMBUS PC800 Qty. (2), 256MB RDRAM Modules (512MB total)
	Hard Drive	Seagate Cheetah 18GB Ultra 160 15k rpm (model 318451LW)
	Network Card	Allied Telesyn AT2700TX 10/100
	RAID Controller	AMI MegaRAID Express 500
	Video Card Sound Card	Diamond Multimedia Fire GL2 (64MB, 4x AGP) Creative Labs Sound Blaster Live CT4830
<b>Drivers</b>	Video Card	Driver provided by Diamond - version 2070
	IDE Drivers	Driver provided by Intel – version 6.10
	Network Card	Driver provided by operating system - version 4.8.0.0
	Sound Card	Driver provided by operating system - version 5.0.2184.1

# Single and Dual 1.0GHz Intel Pentium® III Processor Server Configuration – Dell 2400



<b>Operating System</b>	<b>Windows® 2000 Server</b>	With Service Pack 1
<b>Hardware</b>	Motherboard	Dell PowerEdge 2400 Server
	Chipset	ServerWorks Server Set LE III
	Memory	Samsung PC133 (SDRAM) Qty. (4), 256MB DIMM Modules (1024MB total)
	Hard Drive	(4) Seagate Cheetah 18GB Ultra 160 15k rpm (model 318451LW)
	Network Card	(2) Intel Pro 100+
	RAID Controller	AMI MegaRAID Elite 1600
	Video Card	ATI Rage IIC AGP (on-board)
<b>Drivers</b>	Video Card	Driver provided by operating system – version 5.0.2184.1
	RAID Controller Drivers	Driver provided by AMI – Version 5.21
	Network Card	Driver provided by operating system - version 4.1.67



# Single 1.5/1.7 GHz Intel Pentium® 4 Processor Workstation Configuration



<b>Operating System</b>	<b>Windows® 2000 Professional</b>	With Service Pack 1
<b>Hardware</b>	Motherboard	Intel D850GB, BIOS rev. GB85010a.86a.0058.p12
	Chipset	Intel 850
	Memory	Samsung Rambus PC800 Qty. (2), 256MB RDRAM Modules (512MB total)
	Hard Drive	Seagate Cheetah 18GB Ultra 160 15k rpm (model 318451LW)
	Network Card	Allied Telesyn AT2700TX 10/100
	RAID Controller	AMI MegaRAID Express 500
	Video Card	Diamond Multimedia Fire GL2 (64MB, 4x AGP)
	Sound Card	Creative Labs Sound Blaster Live CT4830
<b>Drivers</b>	Video Card	Driver provided by Diamond - version 2070
	IDE Drivers	Driver provided by Intel – version 6.10.011
	Network Card	Driver provided by operating system - version 4.8.0.0
	Sound Card	Driver provided by operating system - version 5.0.2184.1

# Dual 1.0GHz AMD Athlon™ MP Processor Server Configuration for SPECWeb™ 99



Operating System	Windows® 2000 Advanced Server	With Service Pack 1
Hardware	Motherboard	Tyan Thunder, BIOS rev. PGNA02-7 (not publicly available)
	Chipset	AMD-760™ MP
	Memory	Samsung PC2100 (DDR SDRAM) Qty. (4), 512MB DIMM Modules (2048MB total)
	Hard Drive	(7) Seagate Cheetah 18GB Ultra 160 15k rpm (model 318451LW)
	Network Card	3Com 3C985B
	RAID Controller	AMI MegaRAID Elite 1600
	Video Card	ATI Rage XL PCI (on-board)
Drivers	RAID Controller Drivers	Driver provided by AMI – version 5.21
	Network Card	Driver provided by 3Com - version 2.0.0
	Video Card	Driver provided by operating system – version 5.0.2184.1

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